

REMARKS

Claims 1-18 are now pending in the application. Claims 1-18 stand rejected. Independent claim 1 is amended. Support for the amendment may be found in the specification as originally filed at paragraphs [0008] and [0033]. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

REJECTION UNDER 35 U.S.C. § 102

Claim 1 stands rejected under 35 U.S.C. § 102(b) as being anticipated by Cox et al. (U.S. Pat. No. 5,991,426). This rejection is respectfully traversed.

Cox et al. is generally directed toward field-based watermark insertion and detection. In particular, Cox et al. teaches inserting positive and negative watermarks in separate fields opposite of one another. However, Cox et al. does not teach, suggest, or motivate that an embedding capacity of a relatively more fragile component of a dual component watermark is sufficiently high to reveal alteration at a video block level, while an embedding capacity of a relatively more robust component of the dual component watermark is sufficiently low to ensure that the robust component can be accessed at a higher group level.

Applicants' claimed invention is generally directed toward a semi-fragile watermarking system. In particular, applicant's claimed invention is directed toward embedding a semi-fragile, dual component watermark, with a relatively more fragile component of the dual component watermark being sufficiently high to reveal alteration at a video block level, and an embedding capacity of a relatively more robust component of the dual component watermark being sufficiently low to ensure that the

robust component can be accessed at a higher group level. In particular, independent claim 1, as amended, recites, "an embedding capacity of a relatively more fragile component of said dual component watermark is sufficiently high to reveal alteration at a video block level, and an embedding capacity of a relatively more robust component of said dual component watermark is sufficiently low to ensure that the robust component can be accessed at a higher group level." Thus, Cox et al. does not teach all of the elements of independent claim 1. These differences are significant because, unlike the watermarks of Cox et al., the semi-fragile watermark of the present invention is capable of revealing alteration at a video block level, while also being accessible at a higher group level.

Accordingly, Applicants respectfully request the Examiner reconsider and withdraw the rejection of independent claim 1 under 35 U.S.C. 102(b), along with rejection on these grounds of all claims dependent therefrom.

REJECTION UNDER 35 U.S.C. § 103

Claims 2 and 3 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Cox et al. (U.S. Pat. No. 5,991,426) in view of Perry (U.S. Pub. No. 2002/0012445). This rejection is respectfully traversed.

For discussion of Cox et al., Applicants respectfully refer the Examiner to remarks detailed above with rejection of claim 1.

Perry is generally directed toward authentication watermarks for printed objects and related applications. In particular, the Examiner relies on Perry to teach elements of claims 2 and 3 not recited in the base or intervening claims. However, Perry fails to teach, suggest, or motivate that an embedding capacity of a relatively more fragile

component of a dual component watermark is sufficiently high to reveal alteration at a video block level, while an embedding capacity of a relatively more robust component of the dual component watermark is sufficiently low to ensure that the robust component can be accessed at a higher group level. Thus, neither Perry nor Cox et al., alone or combined, teach, suggest, or motivate all of the elements of claim 1. These differences are significant for the reasons detailed above.

Accordingly, Applicants respectfully request the Examiner reconsider and withdraw the rejection of claims 2 and 3 under 35 U.S.C. 103(a), based on their dependence from an allowable base claim.

Claims 4 and 5 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Cox et al. (U.S. Pat. No. 5,991,426) in view of Perry (U.S. Pub. No. 2002/0012445) and Schneier, "Applied Cryptography". This rejection is respectfully traversed.

For discussion of Cox et al. and Perry, Applicants respectfully refer the Examiner to remarks detailed above with rejection of claims 1-3.

Schneier is generally directed toward cryptography. In particular, the Examiner relies on Schneier to teach elements of claims 4 and 5 not recited in the base or intervening claims. However, Schneier fails to teach, suggest, or motivate that an embedding capacity of a relatively more fragile component of a dual component watermark is sufficiently high to reveal alteration at a video block level, while an embedding capacity of a relatively more robust component of the dual component watermark is sufficiently low to ensure that the robust component can be accessed at a higher group level. Thus, neither Perry, Cox et al., nor Schneier, alone or combined,

teach, suggest, or motivate all of the elements of claim 1. These differences are significant for the reasons detailed above.

Accordingly, Applicants respectfully request the Examiner reconsider and withdraw the rejection of claims 4 and 5 under 35 U.S.C. 103(a), based on their dependence from an allowable base claim.

Claims 6-12 and 14-18 stand rejected under U.S.C. § 103(a) as being unpatentable over Cox et al. (U.S. Pat. No. 5,991,426) in view of Perry (U.S. Pub. No. 2002/0012445) and Weiss, "Watermarking MPEG Video". This rejection is respectfully traversed.

For discussion of Cox et al. and Perry, Applicants respectfully refer the Examiner to remarks detailed above with rejection of claims 1-3.

Weiss is generally directed toward watermarking MPEG video. In particular, the Examiner relies on Weiss to teach elements of claims 6-12 and 14-18 not recited in the base or intervening claims. However, Weiss fails to teach, suggest, or motivate that an embedding capacity of a relatively more fragile component of a dual component watermark is sufficiently high to reveal alteration at a video block level, while an embedding capacity of a relatively more robust component of the dual component watermark is sufficiently low to ensure that the robust component can be accessed at a higher group level. Thus, neither Perry, Cox et al., nor Weiss, alone or combined, teach, suggest, or motivate all of the elements of claim 1. These differences are significant for the reasons detailed above.

Accordingly, Applicants respectfully request the Examiner reconsider and withdraw the rejection of claims 6-12 and 14-18 under 35 U.S.C. 103(a), based on their dependence from an allowable base claim.

Claim 13 stands rejected under U.S.C. § 103(a) as being unpatentable over Cox et al. (U.S. Pat. No. 5,991,426) in view of Weiss, "Watermarking MPEG Video", and Conover et al. (U.S. Pat. No. 6,373,960). This rejection is respectfully traversed.

For discussion of Cox et al. and Weiss, Applicants respectfully refer the Examiner to remarks detailed above with rejection of claims 1, 6-12, and 14-18.

Conover et al. is generally directed toward embedding watermarks into compressed video data. In particular, the Examiner relies on Conover et al. to teach elements of claim 13 not recited in the base or intervening claims. However, Conover et al. fails to teach, suggest, or motivate that an embedding capacity of a relatively more fragile component of a dual component watermark is sufficiently high to reveal alteration at a video block level, while an embedding capacity of a relatively more robust component of the dual component watermark is sufficiently low to ensure that the robust component can be accessed at a higher group level. Thus, neither Cox et al., Weiss, nor Conover et al., alone or combined, teach, suggest, or motivate all of the elements of claim 1. These differences are significant for the reasons detailed above.

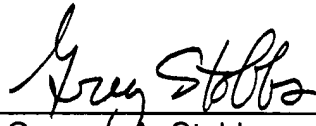
Accordingly, Applicants respectfully request the Examiner reconsider and withdraw the rejection of claim 13 under 35 U.S.C. 103(a), based on its dependence from an allowable base claim.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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